Isolated congenital dislocation of the radial head

Good function in 4 untreated patients after 14–45 years

Bernhard Echtler and Andreas Burckhardt

4 patients with a mean age of 20 years and isolated congenital radial head dislocation (1 unilateral anterior, 1 unilateral posterior and 2 bilateral anterior dislocations) were all pain-free and had almost normal elbow function.

Department of Orthopedic Surgery, Kantonsspital, Baslerstrasse 150, CH-4600 Olten, Switzerland. Tel +41 62 206-4340. Fax -4117. Correspondence: Dr. A. Burckhardt
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Congenital dislocation of the radial head is considered to be the commonest congenital anomaly of the elbow joint (Almquist et al. 1969, Miura 1990, Agnew and Davis 1993). We report the findings in 4 patients first seen in our department between 1989 and 1994.

Case 1

A 22-year-old woman complained of having had a clicking sensation in her right elbow for 8 years. She had some discomfort before the clicking, but normal function. She had no history of trauma and no family member had elbow deformities. Her right elbow was in 20° of valgus angulation and the non-tender radial head could be palpated anteriorly. Flexion-extension and pronation-supination were normal. The elbow was stable and there were no neurological or vascular disturbances in the forearm or hand. When flexing the right elbow joint from full extension, a click could be heard and palpated at 30° and 100° of flexion. 2 years later, the findings were the same. Radiographs showed hypotrophy of the capitellum and anterior dislocation of the radial head. The radial head was not typically dome-shaped and there was no central depression. No radio-humeral joint space was visible. The wrist joint was normal.

Case 2

A 9-year-old boy was referred by his family doctor because his mother had noted increased swelling of the left elbow. He had no trauma and no family member had elbow deformities. The boy was practicing sports without pain or functional impairment. He had a cubitus varus on the left side. There was an extension deficit of 10° on both sides, but no limitation of flexion, pronation or supination. The posteriorly displaced left radial head was prominent and could easily be palpated without pain. The elbow was stable, there were no neurological or vascular disturbances in the forearm or hand and no other deformities. Radiographs showed the posterior dislocation of the left radial head, as well as a small epiphysis of the radial head compared to the opposite side (Figure). 5 years later, the clinical findings were unchanged (Figure).

Case 3

A 13-year-old girl, daughter of Case 4, noticed difficulty in fully extending both elbow joints in gymnastics, but had no pain. She had a valgus angulation of 30° at both elbows, an extension deficit of 15° with full flexion and pronation/supination was 70°/0°/70° in both elbows. Radiographically a bilateral anterior dislocation of the radial head was visible, with the typical dome-shaped form, small epiphysis and hypotrophy of the capitellum. No therapy was undertaken. We reexamined the girl at the age of 18 years and found no functional impairment or pain, but for 4 years she had felt clicking in both elbow joints. There was no limitation of pronation and supination, no instability and the range of motion was unchanged. The anteriorly dislocated radial heads could be palpated and were only slightly tender. Radiographs showed no epiphyseal growth plates any more, the bilateral dome-shaped radial heads were anteriorly dislocated, the capitellum was hypotrophic, the posterior border of the ulna was concave, rather than slightly convex. Her wrist joints were normal. The family history revealed that the girl's mother had similar elbows, 2 brothers and the father had no abnormalities.

Case 2. At the age of 9, the posterior dislocation of the radial head is visible, as is a small epiphysis of the radial head, compared to the opposite side.

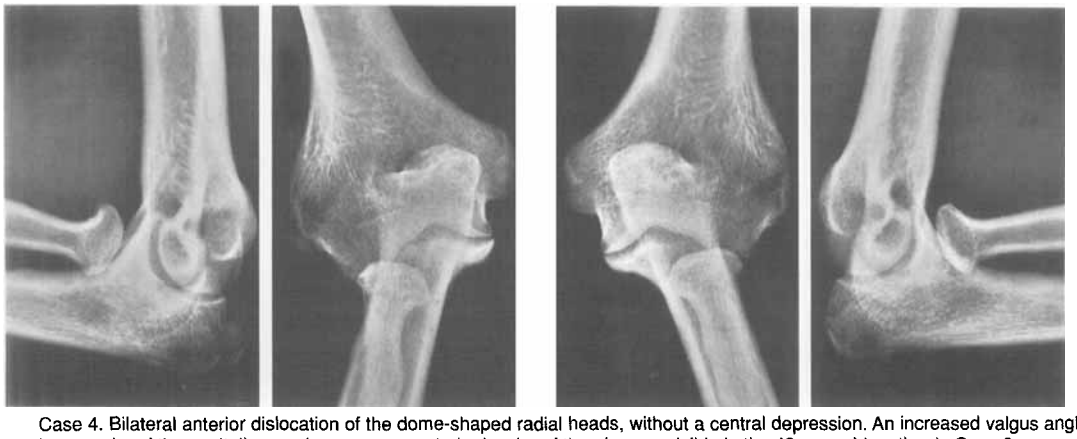
At age 14 years, the posteriorly dislocated radial head is dome-shaped without a central depression and with elongated and thinned contoures. A flattened hypotrophic capitellum can also be seen.

Case 4

The 45-year-old mother of the above-mentioned girl (Case 3), whom we saw once, had never had any problems with her elbows. She had a valgus angulation of 15° at both sides, an extension deficit of 10°, full flexion, full pronation and supination of 50° bilaterally. The anteriorly dislocated, non-tender radial heads could be palpated, there was no instability of the elbow joints, no neurological or vascular disturbances, no other deformities or congenital anomalies. On radiographs, the dome-shaped radial heads with no central depression were bilateral-anteriorly displaced, the capitellum was hypotrophic, the posterior border of the ulna was moderately concave (Figure).

Discussion

Radial head dislocation presents as congenital dislocations or posttraumatic (Weil 1959, Almquist et al. 1969, Miura 1990, Mizuno et al. 1991, Wiley et al. 1991, Agnew and Davis 1993). In our cases there was no trauma. The 2 cases of bilateral anterior dislocation (mother-daughter) seem to have a hereditary basis. Congenital radial dislocation, especially the posterior type, is often associated with a variety of anomalies and syndromes (Almquist et al. 1969, Miura 1990, Agnew and Davis 1993, Zidorn et al. 1994), but in our cases clinical examination showed no further deformities or anomalies. We had 1 case of unilateral



Case 4. Bilateral anterior dislocation of the dome-shaped radial heads, without a central depression. An increased valgus angle, hypotrophy of the capitellum and a concave posterior border of the ulna are visible in the 42-year old mother in Case 3.

anterior, 1 of unilateral posterior and 2 cases of bilateral anterior radial head dislocation. Almquist et al. (1969) reported that almost half of congenital radial head dislocations were anterior, almost half posterior and one tenth lateral. Almost half of the dislocations were bilateral.

Various therapeutic possibilities have been discussed in the literature—for example, resection or rotation osteotomy of the radial head, an ulnar osteotomy, reconstruction of the annular ligament, but also a nonoperative course of observation (Weil 1959, Miura 1990, Mizuno et al. 1991, Wiley et al. 1991, Campell et al. 1992, Futami et al. 1992). Considering the possible complications of surgery, such as progressive cubitus valgus, weakness, regrowth of the radial head or only poor improvement in functional impairment, most authors agree that the indication for an operation must be carefully considered. All our cases had, at the time of follow-up, only minimal functional impairment and no pain. In the case of bilateral anterior dislocation, we found that the 23-year-older mother still had no problems. Therefore we suggest that patients with isolated congenital dislocation of the radial head, without substantial functional impairment, should not be treated.

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